

Leopold Wuhan Zhou

Beijing, China — wuhanzhou@stu.pku.edu.cn — leopoldwuhanzhou.github.io

RESEARCH INTEREST

- **Combinatorics, especially algebraic combinatorics**
- **Mathematical physics, especially those problems related to combinatorics**

EDUCATION

2023 - Present **B.S. in Electronic Information Science and Technology**, Peking University

2023 - Present **B.S. in Mathematics**, Peking University

Selected Courses: Algebra, Complex Analysis, Differential Geometry, Topology, Real Analysis, Quantum Mechanics, Electrodynamics, Statistical Physics, Probability, Stochastic Processes

PAPERS

1. *Realizations and Uniqueness of Cut Complexes of Graphs*. 2025 (With Yufeng Shen, Zhiyu Song, Fenglin Yu, Jingqi Zhuang) arXiv:2512.12933
2. *Neighborhood Complexes of Induced k -independent Graphs*. 2025 (With Yufeng Shen, Zhiyu Song, Fenglin Yu, Jingqi Zhuang) arXiv:2512.09674
3. *Homotopy Type of Total Cut Complexes of Squared Cycle Graphs*. 2025 (With Yufeng Shen, Zhiyu Song, Fenglin Yu, Jingqi Zhuang) arXiv:2512.09674

EXPERIENCES

January 2026 - Present **REU on Stokes Phenomenon**, Peking University

- My mentor is Xiaomeng Xu.

Summer 2025 **PKU Algebraic Combinatorics Experience (PACE)**, BICMR

- I collaborated with Yufeng Shen, Zhiyu Song, Fenglin Yu and Jingqi Zhuang, and our mentor is Lei Xue. This REU is organised by Yibo Gao.
- We studied cut complexes and total cut complexes. Especially, we figured out the homotopy type of squared cycles in some cases. We investigated on the connection between total cut complexes and induced neighborhood complexes. Also, we found out the realizations and uniqueness of cut complexes of some graphs.

Summer 2024 **AI for Mathematics Summer Camp**, BICMR

- This summer camp is organised by Liang Xiao and Bin Dong.
- We learned abstract algebra and wrote Lean4 programs to help AI models to solve math problems.

AWARDS & SCHOLARSHIPS

2025 Zhang Naixin Scholarship, Peking University

Award for Scientific Research, Peking University

2024 Yang Xin Lotus Virtue Awards, Peking University

Award for Academic Excellence, Peking University

SERVICE & LEADERSHIP

Fall 2024-Spring 2025 **Vice Minister of Academic Department of Student Union**, School of EECS

Fall 2023-Spring 2024 **Member of Academic Department of Student Union**, School of EECS

Member of the Youth Volunteer Association, School of EECS

SKILLS

Programming language C/C++, Lean4, Latex, Matlab, Python, SageMath, Verilog

EECS Basic AI, Analogue Electronics, Digital Electronics

Language Chinese, English, Shanghaiese